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Usability Tests Keep the User in Mind

USDA knows that easy-to-navigate Web applications are critical to best serving its customers' needs. As USDA rolls out Web applications, it is actively working to secure accessible, clear, concise, and Section 508-compliant sites. To this effect, USDA is in the process of conducting several usability tests across initiatives to ensure that citizens, employees and customers are satisfied with their user experience while searching for information and conducting transactions. This edition of the eGovernment newsletter is dedicated to highlighting some of these studies.

Usability tests measure both ease of navigation for a particular site and the relevance of its content for a specific audience. These studies prove important because a poorly designed Web site translates into decreased traffic—indeed, a study by Forrester Research found that 40% of people who have a negative experience while visiting a site do not return. To ensure a positive user experience, usability tests measure a user's experience while navigating a Web site on the following criteria:

- *Ease of learning*: Can a new user who has never seen the site, understand, navigate and find information easily?
- *Efficiency of use*: How fast can an experienced user complete a task?
- *Memorability*: Can the user revisit the site without having to "re-learn" the site?
- *Frequency of errors*: Does the user make errors often? If so, can the user recover from the error quickly?

Usability tests incorporate a variety of methods for users to test run a site and answer these very questions. Often, the user is placed in a room with a computer and asked to perform specific tasks. The individual's mouse movements are videotaped, as well as where and how long it takes him or her to find information or complete a task on a prototype or an existing site that is going through redesign. Usability observers take notes during these simulations.

It is important to keep in mind that usability testing is an iterative process; ideally, the prototype is the starting point and a work in progress. Effective usability tests are conducted throughout each stage of design. Incorporating the voice of future costumers, including their response times, needs, and the terminology with which they are familiar, helps to guide developers in designing Web applications. By doing so, usability studies translate into increased productivity and cost savings in the long run.

Many USDA employees, customers and citizens are already participating in usability tests, providing candid insights and suggestions. Once a Web site is built, it the customer or other end

user, not the site's creator who must navigate the site; usability testing seeks to ensure that the site's features and design are adding value and proving a high-quality visitor experience.

For more information on usability testing, please visit:
www.usability.gov.

eGovernment Strengthening Grower Relations

In an effort to ensure ease of use to one of its major customer groups, USDA conducted several usability tests with farmers in March 2003. The purpose of these particular usability tests sought to discover farmers' Internet use patterns, their reaction to proposed changes to the USDA.gov Web site, and to learn why many farmers failed to complete and submit forms online. Ultimately, these usability tests sought to unveil farmers' attitudes and expectations during their Web experience in order to design a final application that they are more likely to use.

The farmers picked for these particular focus groups represented two different regions; one group was from Springfield, Illinois and the other from Lubbock, Texas. The usability tests included one-on-one interviews lasting roughly 50 minutes and observing farmers navigating through a site. The tests revealed inconsistent Internet use and technical capability among different farmers, with most farmers using dial-up connections. Farmers closer to a metropolitan area had more familiarity with the Internet, while older farmers felt least comfortable using the Internet. These results reminded designers to keep Web pages simple by minimizing graphics, making pages quick and easy to load, using consistent language, and creating an application that allows the person to navigate the site intuitively.

The usability tests found that USDA.gov in its current format does not provide easy access to the information that farmers seek. Farmers favored a Web application tailored specifically to their needs; these needs include notification of particular programs, quick access to services, access to calendars and field guides, access to contact information. Further, farmers prefer to minimize the time spent online. Providing specific information would meet farmers' objectives by limiting wasted time searching for these facts.

The usability test also revealed that due to the nature of farm work, growers need a site that is available 24 hours per day, seven days a week, especially during busy crop season. Farmers also want updates based on their geographic location, including news specific to their crops. Moreover, farmers were open to the idea of personalized Web pages that displayed customized information. For example, a grape grower in California could learn about the local weather, find information related to commodity

markets, find prices for crop insurance products or find pricing information for farm equipment specific to grapes for her county. A cotton farmer in Texas could do the same by tailoring the site to his profile.

The tests indicated that the reasons for farmers' reluctance to submit forms online were two-fold. The primary reason was the service and peace of mind that FSA's local offices offered. Farmers often present forms in person at their local FSA office, and these offices have established reputations for providing a high level of customer service, many times helping farmers fill out forms and verifying their accuracy. Interviewing farmers revealed that by using eForms, this face-to-face interaction is limited. Second, while most farmers were not concerned with the idea of submitting personal or financial information to USDA over the Internet, farmers felt uncomfortable submitting social security numbers via the Web.

Learning this critical information helps developers put in place mechanisms for addressing these reservations. According to Ron Butler, Executive Vice President for Creative Communication Networks, who helped conduct the tests, finding methods to deliver the message is key. "When farmers attend Farm Shows, their minds are open. They're looking for new ideas and new ways to make their life a little easier. Demonstrating how the USDA.gov site can benefit them by saving time and money creates an incentive for farmers to migrate to the Web."

Overall, these usability tests provided valuable insights as USDA continues to update its main USDA.gov site. More importantly, the tests were well received among the farmers who participated. One cotton grower summed it best by stating, "I'm glad they're asking people instead of just creating a product without asking customers what they want. They're doing the right thing by asking people." USDA will continue to conduct these assessments throughout the redesign phase of USDA.gov, with the aim of keeping the customer in mind.

Risk Management Agency: Testing the User Experience

USDA's Risk Management Agency (RMA), the agency responsible for managing the national crop insurance program and risk management education, is currently conducting several usability tests to ensure that its Web design is convenient, user friendly, and meets Section 508 standards. In late 2002, RMA sought these changes to revitalize its Web presence and increase its site usage to better serve its audiences. As such, the agency contracted for assistance with usability and accessibility testing, Web site redesign, and staff training.

Before revamping the Web site, statistics showed that the rapid growth following RMA's first Web site redesign in October 1999 had slowed. Although staying at near-record levels of 3.4 million hits per month, site usage had flat-lined.

"There was a need to make significant improvements to the site, but site statistics are only a part of understanding that we needed to change," said Janet Stevens, RMA's Web site Project Manager, "It doesn't give us detailed information about what our customers want from our site and how they want to receive it."

As the first part of its Web redesign efforts, RMA concentrated on its front door and online applications. With this focus, the agency asked itself the following crucial questions: Could the

target audiences use the applications as intended? Was the site easy for users to navigate? Would users recommend the site to others needing crop insurance or risk management information?

After reviewing usability literature and the requirements for complying with Section 508, Stevens and the RMA Web team realized that they couldn't accomplish both its usability goals and Section 508 compliance at the same time. "We realized that we didn't have enough staff or experience to improve usability and ensure current and future Section 508 compliance, especially with our online applications," remarked Stevens. As a result, they decided to outsource the efforts surrounding site usability and online application accessibility.

For the usability testing, RMA defined and ranked its audience groups. Since the Office of Management and Budget limits the number of non-employees who can be surveyed without requiring pre-approval, only the top three user or customer groups were represented in the first round of testing: producers, employees, and crop insurance agents. As a special consideration for Secretary Veneman's 2003 Risk Management Initiative, RMA mandated that minority, limited-resource, and specialty crop producers be part of the survey groups.

The vendor developed screener questionnaires to ensure that the selected sample user group accurately represented the targeted audience. Between April and May of this year, twenty people were selected as the sample user group and an initial round of usability and accessibility testing began.

The tests sought to disclose the site's overall usability, its clarity of purpose and mission, visual design, layout, information architecture, and navigational capabilities. RMA conducted these tests both on- and off-site through a contractor. Individuals who could not attend the on-site testing used a remote online conferencing tool. For the onsite testing, the test administrator worked one-on-one with the subjects while RMA and vendor staff monitored the sessions through a two-way mirror. For off-site subjects, the test administrator and participants talked over the telephone during the interview. As part of the tests, all user mouse and keyboard movements were videotaped; and, the sessions were video recorded and transcribed. RMA intends to use the taped sessions as tools for future training sessions.

RMA's usability tests revealed that participants felt that the site presented comprehensive information that assisted them with tasks related to crop insurance. Employees and most agents could generally find what they needed on the site. However, producers unfamiliar with RMA's organizational structure were unlikely to find the specific information they sought on the site unless they already knew or had been told what they were looking for and where on the site to find it. The study also revealed that producer and insurance agent needs are so diverse for the applications that there may be a need to have different Web sites for each group.

Surprisingly, discussions with employees and partners who deal with limited-resource producers found that, although RMA had separated from the Farm Service Agency (FSA) a decade ago, most producers were not aware that RMA now managed the crop insurance program. Consequently, producers were unfamiliar with RMA's Web site. Once educated, producers were positive about the Web site and its content. RMA sees this added information as an opportunity to start a targeted marketing campaign to increase site usage to this specific customer.

In addition to this valuable discovery, the customer provided useful insights that would make the RMA site easier to use. These suggestions ranged from adding more real-world examples for risk management to providing a more comprehensive glossary and help links written in layman's terms.

As RMA moves forward in meeting its goal and providing a clear, easy-to-navigate site, it is not designing in a vacuum. Rather, it is crafting a site that incorporates its targeted audience's input. Implementing measures such as usability testing promise not only cost savings but also more satisfied customers once the Web site is officially re-launched.

RMA's Web site is available at www.rma.usda.gov.

Usability Studies Taking Place at the Economic Research Service

USDA's Economic Research Service (ERS) is looking to make ERS Online, the agency's Web site, easier and more valuable to use and to enhance the user experience for all customers. While it is also conducting customer satisfaction surveys, another method that ERS is using to achieve a more dynamic experience is through usability testing. To kick off the usability program, ERS is developing a participant database, both using its Web site for customer outreach and canvassing its audience through targeted emails urging participation. To find volunteers, ERS is designing a simple advertisement to go on its Web site that asks users if they would be interested in participating in usability testing. The profiles of those who volunteer are then fed into the ERS database for tracking purposes.

Understanding the need for both precision and accurate feedback, Brenda Powell, Web Analytics Manager for ERS expressed, "We need to find new avenues to promote awareness both externally and internally about the studies that ERS is conducting. Results don't happen overnight. It's incremental and an ongoing process." As a result, ERS intends to regularly test its online services for performance, quality, usability and value to users. This information will guide the development of new web products.

For now, ERS is using usability tests to examine its new search interface, site archive, and new data products. ERS' usability tests consist of three phases: a preliminary interview, solving specific tasks, and debriefing. By using this methodology, ERS gauges a person's familiarity with the agency, technical acumen, and ease of completing tasks. The debriefing portion of the tests allows developers to better understand a person's insights and address questions in order to further develop quality Web applications for the agency's audience.

ERS just completed its first usability test, on the site's foodborne illness cost calculator. "Perhaps the most important take away that we've gleaned during this first exercise is that we need to increase awareness of ERS' site," said Powell. Once the studies are completed, ERS feels confident that it will be able to make modifications to its site to better serve users' needs.

For more information on any of these topics, or for general comments or questions, contact the eGovernment Team at:

- **Phone:** (202) 720-6144
- **eMail:** egov@usda.gov
- **Web:** www.egov.usda.gov

The foodborne illness cost calculator can be found at www.ers.usda.gov/data/foodborneillness/. ERS' main Web site is available at www.ers.usda.gov. For more information on using ERS' survey and measurement tool, contact the eGovernment Team.

USDA: Eliminating Barriers to Information Access

An estimated 40.8 million Americans have a disability, and of that group, 27.3 million have a severe disability. For a tool that depends heavily on sight, cognitive skills and coordination, the Web proves prohibitive to many disabled individuals. In an effort to make the information highway available to all citizens, Congress amended the Rehabilitation Act in 1998 to require Federal agencies to make their information accessible to people with disabilities.

Inaccessible technology interferes with an individual's ability to obtain and use information quickly and easily. Congress enacted this change, known as Section 508, to eliminate barriers in information access. This initiative carves out new opportunities for people with disabilities, and encourages the development of access methods that will help achieve these goals

The law applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508 (29 U.S.C. 794d), agencies must give disabled employees and members of the public, access to information that is comparable to the access available to others. USDA is working hard, and it is committed to ensuring that all its Web applications meet Section 508 standard. One method through which USDA ensures compliance is by conducting usability testing. Testing not only seeks to ensure that customers find Web sites useful and can navigate the site easily, but also to officially certify that sites and applications meet Section 508 standards.

Developers are attentive to the needs of individuals who are hearing impaired, visually impaired, and cognitive impaired when designing Section 508 compliant Web sites. For example, approximately 10.4 million Americans are visually impaired. To adapt to these individuals' needs, USDA is working to make its Web pages clearly formatted so that visually impaired individuals too can reap the benefits of the USDA.gov pages. In organizing the Web site, developers keep in mind that these individuals listen to a Web site via a software program. The program acts like a screen reader that then converts text into speech. It is, therefore, critical that a Web site's layout is able to be interpreted by the helper program.

The Center for Information Technology Accommodation (CITA), in the U.S. General Services Administration's Office of Governmentwide Policy, is charged with the task of educating Federal employees and building the infrastructure necessary to support Section 508 implementation. Understanding the importance of meeting Section 508 requirements, GSA is taking its procurement training on the road to select cities across the country. The training series, titled *Acquiring Technology: What Every Federal Employee Needs to Know About Section 508*, is now scheduled for Atlanta, GA, and Denver, CO in July.

Federal employees and the public can access resources for understanding and implementing the requirements of Section 508 at www.section508.gov.